

CLAIMS

1. A method of processing a speech frame in a radio system,
comprising
channel-decoding a speech frame having propagated over a radio
5 path;
if the speech frame is free of defects on the basis of the channel-
decoding,
it is inferred from the value of at least one speech
parameter in the channel-decoded speech frame whether the speech frame
10 contains speech that is decodable by means of a speech decoder,
and if, according to the inference, the speech frame
does contain speech that is decodable by means of a speech decoder, the
speech frame is decoded by means of a speech decoder,
and if, according to the inference, the speech frame
15 does not contain speech that would be decodable by means of a speech
decoder, the speech frame is not decoded.
2. A method according to claim 1, wherein the speech frame is
encrypted, whereby decryption of the speech frame is performed in the
method.
- 20 3. A method according to claim 2, further comprising:
performing the decryption of the speech frame after the channel-
decoding, prior to the inference.
4. A method according to claim 3, wherein if, according to the
inference, the speech frame does not contain speech that would be decodable
25 by means of a speech decoder, a bad frame indication is sent to the speech
decoder.
5. A method according to claim 3, wherein if, according to the
inference, the speech frame does not contain speech that would be decodable
by means of a speech decoder, a homing sequence is sent to the speech
30 decoder.
6. A method according to claim 1, wherein the symbols in the
speech frame that are protected by channel coding are also used in the
inference.
7. A method according to claim 1, wherein the inference is
35 performed by utilizing probability calculation.

8. A method according to claim 7, wherein in the inference the probability of the value of at least one speech parameter is calculated.

5 9. A method according to claim 1, wherein in the inference the probability of change in the value of at least one speech parameter is calculated.

10. A method according to claim 9, wherein a threshold value has been defined for the probability of change in the value of a parameter during a given number of speech frames.

10 11. A method according to claim 10, wherein if the probability of change is lower than the threshold value, it is inferred that the speech frame does not contain speech that would be decodable by means of a speech decoder.

15 12. A radio system comprising:
a channel decoder for channel-decoding a channel-coded speech frame having propagated over a radio path;
a speech decoder for decoding the speech frame; and
inferring means for inferring from the value of at least one speech parameter in the channel-decoded speech frame whether the speech frame contains speech that is decodable by means of the speech decoder if the
20 speech frame is free of defects according to the channel decoder ;
and the speech decoder is arranged to decode the speech frame if, according to the inference, the speech frame does contain speech that is decodable by means of the speech decoder ; and the speech decoder is arranged not to decode the speech frame if, according to the inference, the
25 speech frame does not contain speech that would be decodable by means of the speech decoder.

13. A radio system according to claim 12, wherein the speech frame is encrypted, whereby the radio system comprises a decryption device for performing decryption of the speech frame.

30 14. A radio system according to claim 13, wherein the decryption device is connected between the channel decoder and the inferring means.

15. A radio system according to claim 14, wherein the inferring means are arranged to send a bad frame indication to the speech decoder if, according to the inference, the speech frame does not contain speech that
35 would be decodable by means of the speech decoder.

16. A radio system according to claim 14, wherein the inference means are arranged to send a homing sequence to the speech decoder if, according to the inference, the speech frame does not contain speech that would be decodable by means of the speech decoder.

5 17. A radio system according to claim 12, wherein the inferring means also use in the inference symbols in the speech frame that are protected by channel coding.

18. A radio system according to claim 12, wherein the inferring means perform the inference by utilizing probability calculation.

10 19. A radio system according to claim 18, wherein the inferring means calculate in the inference the probability of the value of at least one speech parameter.

15 20. A radio system according to claim 12, wherein the inferring means calculate in the inference the probability of change in the value of at least one speech parameter in the speech frame to be processed.

21. A radio system according to claim 20, wherein in the inferring means, a threshold value has been defined for the probability of change in the value of a parameter during a given number of speech frames.

20 22. A radio system according to claim 21, wherein the inferring means infer that the speech frame does not contain speech that would be decodable by means of a speech decoder if the probability of change is lower than the threshold value.

23. A mobile station in a radio system, comprising:

25 a channel decoder for channel-decoding a channel-coded speech frame having propagated over a radio path;

a speech decoder for decoding the speech frame; and

30 inferring means for inferring from the value of at least one speech parameter in the channel-decoded speech frame whether the speech frame contains speech that is decodable by means of the speech decoder if the speech frame is free of defects according to the channel decoder;

and the speech decoder is arranged to decode the speech frame if, according to the inference, the speech frame does contain speech that is decodable by means of the speech decoder; and the speech decoder is arranged not to decode the speech frame if, according to the inference, the speech frame does not contain speech that would be decodable by means of the speech decoder.

35

24. A network of a radio system, comprising:

a channel decoder for channel-decoding a channel-coded speech frame having propagated over a radio path;

a speech decoder for decoding the speech frame; and

5 inferring means for inferring from the value of at least one speech parameter in the channel-decoded speech frame whether the speech frame contains speech that is decodable by means of the speech decoder if the speech frame is free of defects according to the channel decoder;

10 and the speech decoder is arranged to decode the speech frame if, according to the inference, the speech frame does contain speech that is decodable by means of the speech decoder; and the speech decoder is arranged not to decode the speech frame if, according to the inference, the speech frame does not contain speech that would be decodable by means of the speech decoder.

15